Attachment "I"

SOLID SUPPORT COMPRISING AN ARRAY OF SUBSTRATE SURFACES FOR NUCLEIC ACID ANALYSES AND APPLICATIONS, AND OTHER COMPOSITIONS AND SYSTEMS EMPLOYING NON-RADIOACTIVE CHEMICALLY LABELED OLIGONUCLEOTIDES OR POLYNUCLEOTIDES

Abstract Of The Disclosure

Nucleic acid arrays are useful for nucleic acid analyses and a host of applications, including detection, mutational analysis, quantification and sequencing. Such arrays are designed and provided on solid supports by fixing or immobilizing nucleic acid strands to substrate surfaces. Such fixed or immobilized nucleic acid strands may be hybridized to nucleic acid strands or sequences therefrom which have been labeled non-radioactively and are detectable non-radioactively. The labeled nucleic acid strand comprises one or more non-radioactive chemical label or labels which comprise a non-radioactive signaling moiety or moieties which are quantifiable or detectable. The nucleic acid arrays provided by this invention comprise different nucleic acid strands or sequences therefrom, i.e., at least one nucleic acid strand or sequence therefrom in one substrate surface is different from at least one other nucleic acid strand or sequence therefrom in another substrate surface. The solid supports can be porous or non-porous, transparent or translucent, and they can be made from a great number of different materials, e.g., glass, plastic, and can assume a great number of shapes, e.g., plates, wells, depressions, tubes, cuvettes, and collections or sets of such plates, wells, e.g., microtiter wells, depressions, tubes or cuvettes. The substrate surfaces can vary, and, along with the solid supports, the substrate surfaces can also be treated with surface treatment agents, including, for example, DDA, PPL, γ-aminopropyltriethoxysilane, ammonium acetate and epoxy compounds. Treatments can be made to glass or plastic surfaces. Other compositions and systems are provided by this invention, such other compositions and systems comprising nucleic acid strands fixed or immobilized to solid supports or directly to the surface of a system which is transparent non-porous or translucent non-porous. These other compositions and systems are useful for quantifying the signal produced by the signaling entities or the chemical labels.

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